

1. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 2^2 + 1 \div 20 * 19 \div 5$$

- A. $[0.18, 0.27]$
 - B. $[-0.03, 0.13]$
 - C. $[7.96, 8.06]$
 - D. $[8.17, 8.23]$
 - E. None of the above
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2. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-2178}{11}}i + \sqrt{165}i$$

- A. Nonreal Complex
 - B. Pure Imaginary
 - C. Not a Complex Number
 - D. Rational
 - E. Irrational
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3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{63 + 88i}{4 - 3i}$$

- A. $a \in [15.5, 18.5]$ and $b \in [-29.5, -28.5]$
- B. $a \in [-1, 0]$ and $b \in [20.5, 23]$
- C. $a \in [-13, -10]$ and $b \in [20.5, 23]$
- D. $a \in [19.5, 21.5]$ and $b \in [6, 7]$

E. $a \in [-1, 0]$ and $b \in [540.5, 542.5]$

4. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{53361}{441}}$$

- A. Not a Real number
 - B. Whole
 - C. Integer
 - D. Rational
 - E. Irrational
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5. Simplify the expression below and choose the interval the simplification is contained within.

$$9 - 19^2 + 13 \div 4 * 15 \div 1$$

- A. $[-305.25, -301.25]$
 - B. $[368.22, 380.22]$
 - C. $[416.75, 420.75]$
 - D. $[-360.78, -350.78]$
 - E. None of the above
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6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(2 - 10i)(-8 - 3i)$$

- A. $a \in [-18, -11]$ and $b \in [27, 31]$
- B. $a \in [11, 15]$ and $b \in [82, 90]$
- C. $a \in [-50, -38]$ and $b \in [-74, -69]$

D. $a \in [11, 15]$ and $b \in [-88, -85]$

E. $a \in [-50, -38]$ and $b \in [73, 76]$

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-8 - 9i)(10 - 4i)$$

A. $a \in [-118, -110]$ and $b \in [-60, -52]$

B. $a \in [-46, -43]$ and $b \in [-123, -115]$

C. $a \in [-118, -110]$ and $b \in [52, 60]$

D. $a \in [-46, -43]$ and $b \in [115, 125]$

E. $a \in [-81, -74]$ and $b \in [34, 39]$

8. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{39204}{484}}$$

A. Integer

B. Not a Real number

C. Whole

D. Irrational

E. Rational

9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-910}{5}}i + \sqrt{156}i$$

A. Irrational

B. Not a Complex Number

- C. Pure Imaginary
 - D. Nonreal Complex
 - E. Rational
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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{72 - 77i}{-6 + 2i}$$

- A. $a \in [-15, -14]$ and $b \in [7, 9.5]$
 - B. $a \in [-15, -14]$ and $b \in [316.5, 319]$
 - C. $a \in [-12.5, -11.5]$ and $b \in [-39, -38]$
 - D. $a \in [-8, -6]$ and $b \in [14.5, 16.5]$
 - E. $a \in [-587, -585.5]$ and $b \in [7, 9.5]$
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